

The Value of Recreational Angling For Grey Mullet
and the Case for Recreational-Priority Status

A Position Paper by the National Mullet Club

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Cover picture: Leon Roskilly, who wrote the foreword for the first edition of this paper, with a 7lb 12oz specimen thick lipped mullet from the River Medway in Kent. In common with the large majority of mullet anglers, Leon returned his fish unharmed to the water. Tagging has shown that the fish may well be caught again from the same area – a truly sustainable use of a fishery resource.

Foreword to the First Edition

By Leon Roskilly of the Sea Anglers' Conservation Network

One of the drivers for mullet anglers, many who return all the fish that they catch to the water, is the potential to catch especially large specimens.

The National Mullet Club issue certificates and trophies to mullet anglers reporting the capture of larger fish, and organises fish-ins around the regions where all fish are returned. The 'reward' to the mullet anglers taking part is photographs, reporting of captures in the Club magazine, and perhaps the possibility of obtaining a particular trophy for that year.

The competition nature of mullet angling (including individuals simply trying to beat their own 'previous best' record) results in anglers studying the species much more closely to understand the behaviour of mullet, and the marine environment that supports the mullet population.

So the larger fish become highly prized.

And because they are so prized, mullet anglers carefully return a (say) 6lb specimen in the realistic hope that it may be recaptured again at a higher weight: 7lb, 8lb, 9lb or even 10lb plus.

Evidence suggests that if larger fish are released after being caught, they may be caught again possibly several more times in the same area. The primary consideration in developing a recreational mullet fishery is to ensure a reasonable number of larger specimens are present. Very few mullet are taken by anglers "for the pot."

And yet mullet in UK waters take many years to reach specimen weight: 10, 15, 20, 25 years. When a 6lb fish is netted, maybe 15 or 20 years old, it will never become a prized specimen of 8lb plus.

And it will take nature one or two decades to produce another fish of that potential in that place.

When netted, an area that previously contained a mature population, including specimen sized fish, may slowly gain a new population of mullet, but it will be lacking those larger specimens in appreciable numbers for the next one or two decades. Even if the area is not netted again, the stock of larger fish may not regenerate in the remaining lifetime of many of the mullet anglers whose sport has been ruined for a very small return to the netsman.

The need is to conserve not only numbers of mullet available in bays, harbours and small estuaries but to provide a level of protection that will preserve mature populations containing a reasonable number of the prized larger specimens that are of the utmost importance to the serious mullet anglers.

Foreword to the Second Edition

By Martin Salter, National Campaigns Coordinator of the Angling Trust



It was several years ago that my love affair with mullet began and it was entirely due the National Mullet Club (NMC) who had invited me down in my capacity as Parliamentary Spokesman for Angling to present the trophies at their annual prize giving. I quickly realised that I was not only in the presence of some very skilful anglers but that these guys really were all round fisherman, many of whom would be as equally at home tracking down a shoal of chub in a lowland river as they would be chasing bass or mullet in an estuary or from a small boat.

Mullet are indeed the ultimate cross-over species and for someone like myself, who was brought up as a coarse angler, they have provided a welcome and fascinating extension to my fishing world. The mullet has rightly been likened to a British bonefish. They may not live in such pristine surroundings but they certainly look the part, are as frustrating to tempt and fight like hellcats!

Mullet may not be as fashionable as some fish but as this excellent paper demonstrates they are sought by recreational sea anglers throughout the UK and rank as the fourth most important shore target species. They are recognised as one of the all important “gateway species” that attracts many young people into

recreational sea angling. They are of significant economic value and it has been estimated that UK anglers spend £5.2 million per annum on mullet fishing compared to a commercial fishery valued at £388k p.a.¹ These figures demonstrate that beyond a shadow of doubt recreational mullet angling represents a far greater economic return and the return and survival rates show a much lower impact on stocks.

So why then do we allow this wonderful fish with virtually no commercial value to be netted in our rivers and estuaries ?

We know that the slow growing mullet is vulnerable to commercial over-fishing and the NMC records stretching back 30 years show a gradual downward trend in catches by anglers.

We know that permissible netting for mullet in bass nursery areas results in a bycatch of juvenile bass, not all of which are returned unharmed.

We know that our estuaries are important recruitment grounds for a host of other species besides mullet and that they need far stronger protection in their own right in order to support better stock recovery.

We know that removing the mullet nets is the right thing to do to create a long term sustainable fishery and that the time is right before the species attracts a higher share of the commercial market.

The Angling Trust is 100% behind the National Mullet Club's campaign to achieve Recreational-Priority Status for mullet as a means of reversing the downward trend in mullet stocks and of ensuring "Best Value" use of the mullet fishery. We will be taking this paper to Parliament and to Government Ministers in order to obtain the protection that the mullet so clearly deserves.

¹ MMO figure for 2010 later updated to £392k. Latest data for 2011 is £493k

Summary of Key Points of this Paper

- Mullet are sought by recreational sea anglers throughout the UK, including Scotland and rank as the fourth most important shore target species overall.
- Mullet are an important “gateway species” attracting many freshwater anglers and junior anglers into recreational sea angling.
- It is estimated that UK anglers spend £5.3 million per annum on mullet fishing compared to a commercial fishery valued at £493k p.a.
- On average anglers spend £22 – £25 to catch 1kg of mullet; their commercial value is around £2.28 per kg.
- Recreational mullet angling represents a greater economic return from the species while having a much lower impact on stocks. It is estimated that at least 86% of recreationally caught mullet are returned alive to the water, and the survival rate of released fish is high, probably better than 96%.
- Mullet are vulnerable to commercial over-fishing. They are slow-growing, slow to mature sexually and only a proportion of the stock breeds in any one year. Female mullet do not reach sexual maturity until 47cm in length at 11 years old. There is some evidence that increasing commercial landings have exceeded a sustainable level.
- NMC records stretching back 30 years show a gradual downward trend in catches by anglers and recent rapid declines at some venues
- NMC’s primary aim is Recreational-Priority Status for mullet as a means of reversing the downward trend in mullet stocks and of ensuring “Best Value” use of the mullet fishery. A number of practical measures are proposed.



NMC wants to see proper protection for mullet such as this 7lb 9oz specimen that is around 25 years old

1. National Mullet Club

1.1 The National Mullet Club (NMC) was founded in 1975.

1.2 The NMC aims are promote interest and efficiency in catching and the conservation of grey mullet of the three common species existing in Northern European waters, namely; **Chelon labrosus** (thick-lipped grey mullet), **Liza ramada** (thin-lipped grey mullet) and **Liza auratus** (golden-grey mullet).

1.3 NMC is affiliated to the Angling Trust.

1.4 The table indicates the geographical spread of NMC membership:

Area	% Membership
East Anglia, Essex, London, Kent	10.7
Sussex & Surrey	21.5
Hampshire & IOW	12.8
Dorset	8.1
Other South West	24.2
Midlands	1.3
N. England	3.3
Wales	7.4
Scotland	2.0
Northern Ireland	1.3
Overseas (CI, IOM, Eire...)	7.4

1.5 Some 91.3% of NMC members live on mainland Great Britain and of these a little over one third (32.3% out of 91.3%) live in the area covered by the Invest in Fish South West report 2005 (Ref 1) which includes Dorset. It is very probable that NMC members are representative of the mullet angling population generally and thus that this one third fraction can form a reliable working assumption about the mullet angling population that will be used elsewhere in this document.

1.6 NMC only recognises mullet returned alive to the water in its trophy competitions and certificate scheme, and all mullet caught at NMC meetings must be returned alive. The sale of mullet on a professional or casual basis disqualifies persons from NMC membership.

2. Popularity of Recreational Mullet Angling

- 2.1 In common with other recreational sea angling organisations it is the case that NMC represents only a small fraction of its potential target membership.
- 2.2 There have been no comprehensive studies of the level of national participation in mullet angling.
- 2.3 The Invest in Fish S.W. report 2005 (Ref.1) estimated that 8% of some 241000 recreational sea anglers in the South-West (about 19000 anglers) would list mullet in their top five target species.
- 2.4 Using the working assumption in section 1.5 would suggest an estimate in the region of 57000 recreational sea anglers on mainland UK with a similar level of interest in mullet. This figure does not allow for any growth in interest in mullet angling since the IIF data collection. We believe such growth may be quite significant. For example, an archive search on the popular World Sea Fishing forum reveals 128 mullet-related threads started in 2006, but 184 in 2011.
- 2.5 Recreational mullet angling is most popular in the South-West and along the South Coast of England.
- 2.6 However, mullet are present and mullet angling practiced by NMC members at Torness in S.E. Scotland; Hartlepool; Suffolk and Essex; Kent, especially in the Medway area where there is a local Mullet Group; throughout Wales; Liverpool Docks; and at Ayr and in the Clyde Estuary in S.W. Scotland.
- 2.7 A survey by the former NFSA in 2006 (Ref 8) of the importance of different fish species by region concluded that mullet are the fourth most important target of shore anglers in the UK.
- 2.8 Mullet angling is unique in attracting a significant following of coarse anglers to sea angling because the tackle and tactics used are so similar. There is a recent growing interest in fly-fishing for mullet that may similarly attract numbers of game anglers.
- 2.9 Often being highly visible and available in accessible environments, mullet are an important species in attracting junior anglers into the sport of sea angling and being catchable from quaysides, piers etc they form a realistic target for disabled anglers.

3. Mullet Angling Economics

3.1 The liF South West report 2005 (Ref 1) identified 54000 trips p.a. targeted at mullet with an average of 16.6 trips per annum per shore angling household directed at all species. Mullet would therefore represent the equivalent of 3253 average household annual expenditures which liF identified as £469 for shore-fishing households, giving a total mullet angling spend of £1.5million by South West sea anglers per annum. This under-represents the contribution of the minority of private boat mullet anglers who would increase this figure marginally by spending more per annum than shore anglers.

3.2 A £1.5M S.W. total spend on mullet by recreational sea anglers may translate to a national total in the region of £4.5M using the working assumption in section 1.5. This figure would be approximately £5.3M now allowing for compound inflation using the Consumer Price Index but probably still underestimates the current spend as it does not allow for any growth in interest in mullet fishing since the liF data collection, as discussed in section 2.4.

3.3 liF quoted an average catch of 2.2 mullet per trip with an average mass of 0.6kg, giving an annual catch of $54000 \times 2.2 \times 0.6 = 71280\text{kg}$ and a value per kg of $\text{£}1\,500\,000 / 71280\text{kg} = \text{£}21$ per kg. This figure rises to around £24.80 at the end of 2012 allowing for compound inflation using the CPI.

3.4 A survey of NMC membership in 2004 revealed an average annual spend specifically on mullet angling of £700.36 per member, or approximately £823 allowing for inflation.

3.5 This expenditure breaks down into the following categories:

Direct Fishing Expenditure Tackle, Bait, Boat Expenses, Permits etc	48%
Travel Car Expenses, Public Transport	22%
Accommodation Hotel, Guest Houses, Camping	20%
Meals Pub Meals, Fast Food Outlets, etc	10%

3.6 The three year rolling average annual catch reported by members for 2009-2011 was 31 mullet of all three species per reporting member (see section 6.7). The average mass per fish was approximately 1.2kg giving an average annual total of approximately 37.2kg

3.7 Combining these data would suggest an average value of the mullet to the NMC member of approximately £22.12 per kg.

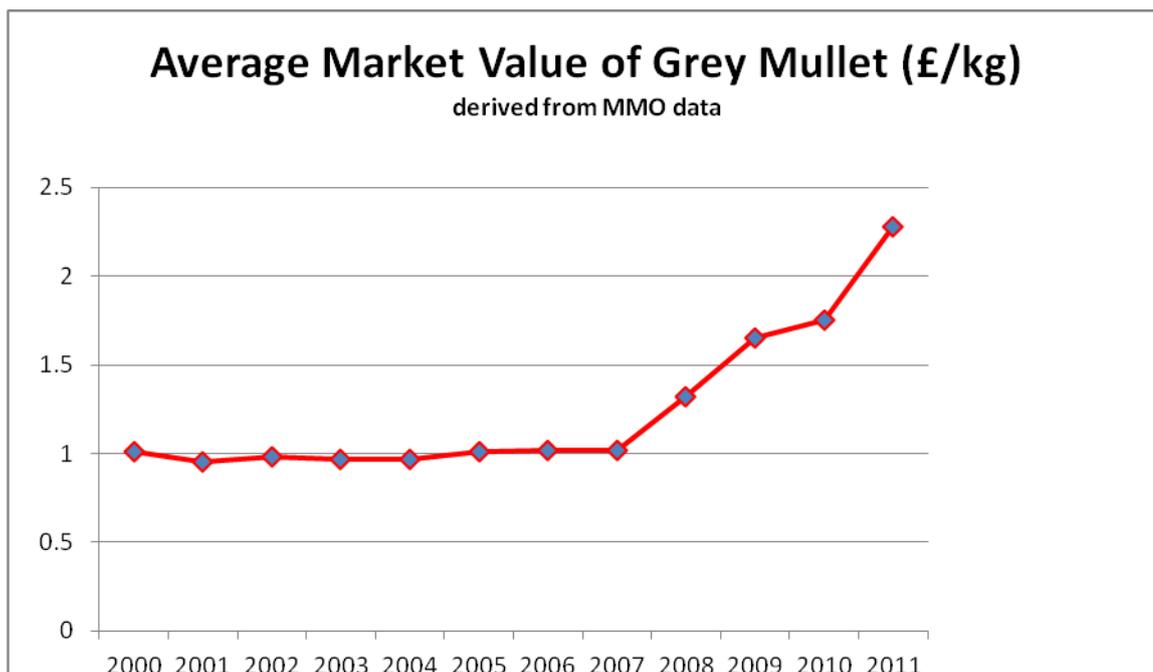
3.8 This value agrees acceptably with that calculated using liF data in section 3.3 above, and may not be untypical: less specialist anglers would spend less on mullet angling but would also catch less mullet.



This mullet of over 8lbs may represent the pinnacle of this angler's mullet fishing career that has spanned many years and seen the expenditure of thousands of pounds on tackle, accommodation and transport. The fish was returned alive and if it evades nets may form a prized capture for other anglers in future. Its value to a netsman would average around £8.50, but may be much less and the fish may be cut up for pot bait.

4. Commercial Mullet Fishing Economics

4.1 MMO data (Ref 2) revealed landings in 2011 of 215.8 tonnes of grey mullet with first sale value of £492 771. This corresponds to an average market price of £2.28 per kilogram (£1.04 per pound). There has been a dramatic rise in market value of grey mullet since 2007 thought to be linked to promotion of mullet as an eating fish by celebrity chefs and more aggressive marketing of non-traditional eating species of fish, including a rebranding of grey mullet as “silver mullet”. The data in the table is derived from MMO statistics (Ref 2.)



The rise in market value has driven an increased commercial effort targeted on grey mullet, see Section 8.

4.2 The nature of the commercial fishery (see section 8.4) ensures that a substantial proportion of landings go unrecorded and disappear onto the grey market.

4.3 The market price for grey mullet varies considerably by area, by season, and by the amount of fish landed. Persistent anecdotal accounts from NMC members report mullet used as pot bait and even dumped dead where (presumably) more valuable fish species have been targeted. A Cefas report in 2008 into the commercial mullet fishery (Ref 3) confirmed *“Not all mullet landed are sold, especially if in small volumes, due to limited market demand and low price (mainly 40p - £1.50/kg, the larger fish fetching the better price). Much of the mullet landed goes for pot bait, or to local pubs, and a significant proportion appears to be taken by hobby fishermen for home consumption – barbeques etc.”*

4.4 The commercial sale value of mullet is so low that few if any commercial fishermen can genuinely rely upon mullet for all or substantial part of their livelihood. For example, data from the Cefas report (Ref 3) for Poole, which is the major centre for directed commercial mullet fishing on the south coast, records catches of 59t of grey mullet valued at £37k shared between 20 small open boats working inside Poole Harbour and the by-catch from 6 or 7 larger vessels working outside (2006 data). This suggests an average income of only £1400 per boat derived from grey mullet, and presumably significantly less per fisherman, before overheads.

4.5 Mullet fishing is often used as an "excuse" to carry on fishing for more valuable fish such as bass and sea-trout. From the Cefas report (Ref 3) again: *“Examination of sales notes revealed that bass often exceed mullet in both quantity and value in individual landings and there must be some doubt as to how well the Poole Harbour Bass Nursery Area is observed.”* and *“There is concern about a perceived increase in mullet netting in estuarine bass nursery areas in the south-west, which could damage bass and migratory salmonid stocks if not carefully regulated.”*

4.6 NMC regards commercial mullet fishing as a poor value over-exploitation of a common resource that would be much more effectively utilised by development of recreational mullet angling.

4.7 This was summed up unintentionally by Cornish fish auctioneer, Robin Turner, quoted in The Cornishman newspaper on 6th February 2007, following a multiple-tonne haul of mullet by seine net at Sennen Cove ... *“There is no big financial gain but everyone ends up in the pub after the fish have gone to be sold at Newlyn fish market.”*



Mullet form an ideal introduction to recreational sea angling for youngsters because of the easy access to many venues. For the same reason they are an ideal target for disabled anglers.

5. Impact of Recreational Mullet Angling on Mullet Stocks

- 5.1 As calculated in section 3.3, data from the liF South West report (Ref 1) indicate a recreational sea angling capture by South West residents of about 72 tonnes of mullet per year.
- 5.2 NMC feels this figure may be about correct by default. The sampling method used by liF may well have overestimated the number of mullet trips (as mullet anglers are easily sampled as they generally fish by day in accessible locations). Set against this the 0.6kg average mass used seems very low at about half the NMC average, even allowing for regional variation.
- 5.3 Using the working assumption from section 1.5, 72 tonnes in the S.W. might convert to a national total of about 216 tonnes. There are other assumptions involved here regarding angler activity, catch rates and average mass of fish.
- 5.4 liF estimates a catch and release rate of 86% (and 14% retained) in the South West. Although good, in NMC's view this figure is significantly below the national average. In other areas of the country there is a much greater influence from coarse angling that has led to a greater uptake of catch-and-release angling for mullet.
- 5.5 liF also uses a blanket 10% mortality figure for released fish of all types. In NMC's view this is unduly pessimistic for mullet as the nature of their feeding and the tackle and tactics used mean they are very rarely deep-hooked; neither are they hauled up from deep water. Anecdotal evidence from NMC members suggests the accidental mortality rate may be 1% or less, essentially negligible. An Australian study (Ref 4) into survival of catch-and-release by a similar grey mullet species concluded a mortality rate of 4%.
- 5.6 In view of the above, NMC considers that the **national** mortality of mullet due to recreational anglers is probably in the region of 30 tonnes per annum such as may be calculated by 14% of 216 tonnes, offsetting a national retention rate slightly less than 14% by a small percentage mortality of returned fish.
- 5.7 NMC would prefer recreational anglers to practice catch and release for mullet at all times and in all places; however, we believe the current level of angler exploitation of the fishery is entirely sustainable.

6 Catch Trends in Mullet Angling

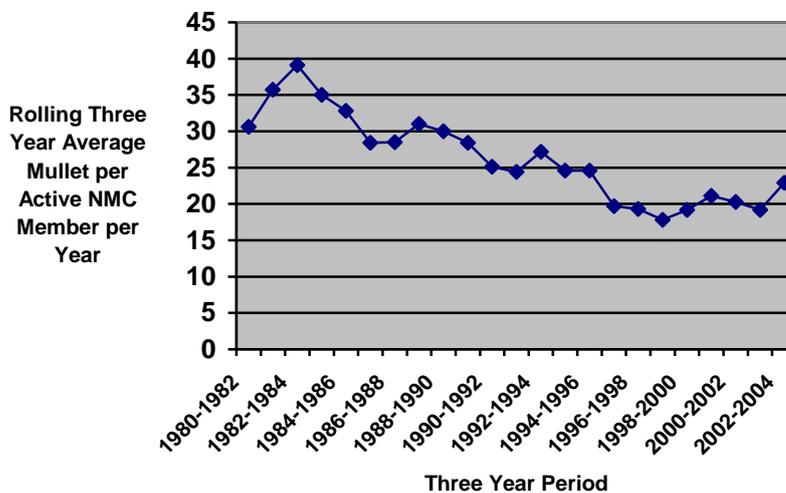
6.1 Anecdotal evidence from NMC members of long-standing is that mullet stocks have declined in many areas and members often have to travel further to obtain reasonable levels of sport.

6.2 The IiF South West report (Ref 1) found that 53% of anglers believed mullet stocks have declined compared to 11% who believed they have increased.

6.3 NMC members are encouraged to return monthly catch report forms. Generally between a quarter and a third of the membership do so. Aggregate annual data is compiled from these returns.

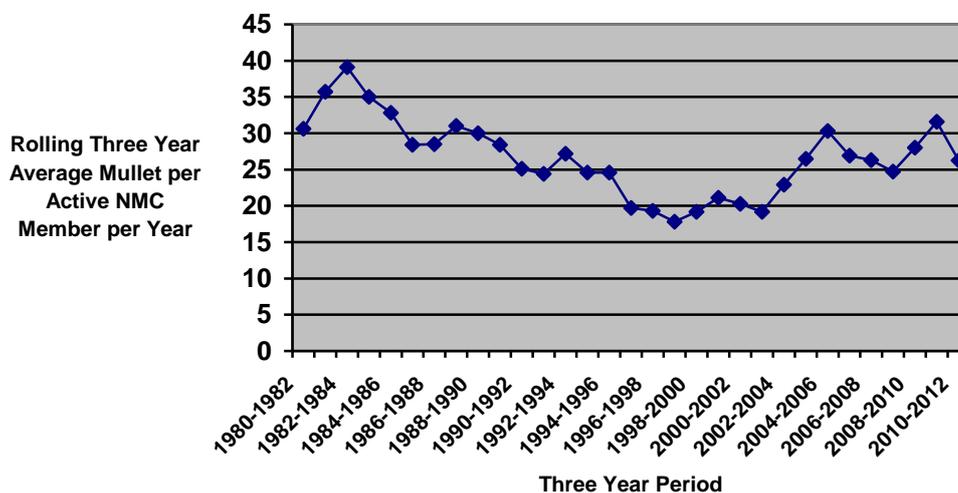
6.4 Annual "Mullet per Active NMC Member" data shows considerable year-on-year variability due to weather patterns affecting fishing effort during the summer/autumn mullet season and due to the variations in activity of a small number of particularly prolific members. A three year rolling average can be used to smooth over major variations without concealing long term trends.

6.5 The pattern of the rolling average, aggregating all three species of mullet, over the past 22 years was shown on this graph in the first edition of this paper:



6.6 The main trend over most of this time period was clearly downward. This was a considerable cause for concern at the time and the fundamental reason why NMC published the first edition of this paper in 2006.

6.7 An updated version of this graph is now available. The reader should be advised it needs considerable interpretation.



6.8 The recent data shown on the graph has been skewed upwards to some extent by a few particularly capable and prolific anglers who have joined NMC, by an increased use of small boats for mullet angling, by the continued extension of the mullet season and, in particular, by the recent development of recreational mullet fishing throughout the winter in West Cornwall.

6.9 NMC remains concerned about the state of mullet stocks. We now have a situation where mullet anglers can, in a good year, barely catch at levels achievable 30 years ago despite ...

- A substantial lengthening of the main mullet season, presumably due to the warming climate, formerly five months from mid-May to mid-October but now routinely eight months from early April to late November.
- The development of the winter fishery in West Cornwall that has extended the season to 12 months for local anglers and some visitors.
- Huge advances in mullet angling knowledge, techniques and tackle including more use of small boats to widen the choice of venues available.
- Mobility away from areas perceived to be badly affected by netting in favour of those deemed less affected. In other words, at many venues the quality of fishing has declined alarmingly, and only by selectively fishing the best remaining venues is it possible to maintain catches at an acceptable level.

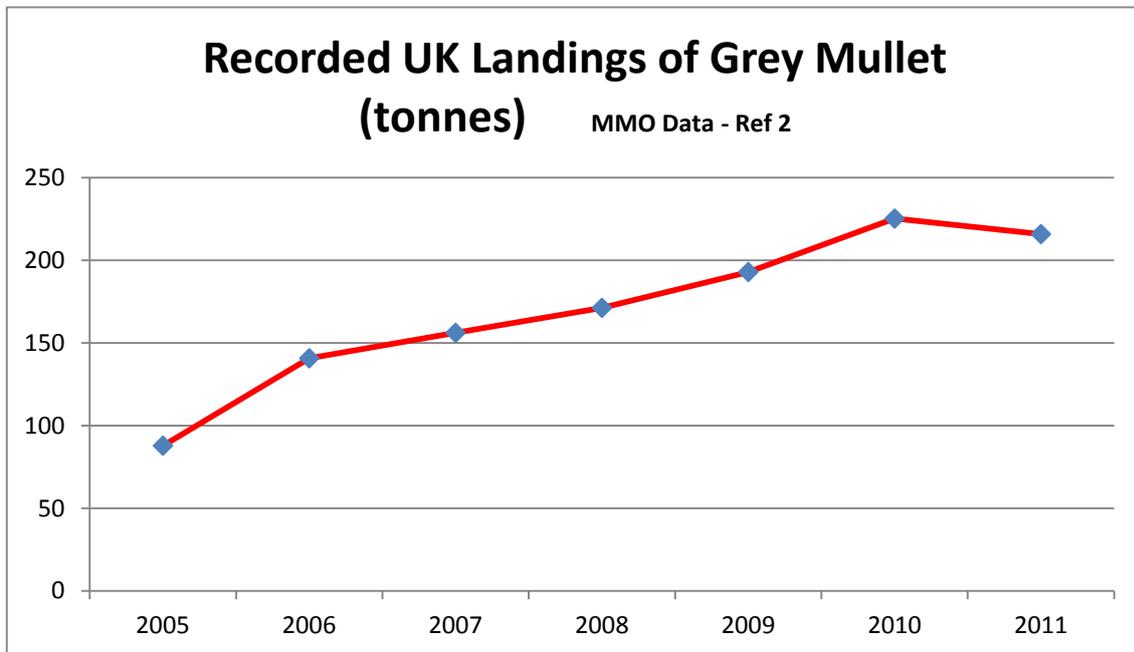
7. NMC Tagging Survey

- 7.1 NMC conducted a low-intensity tagging survey of thick-lipped mullet between 1987 and 2000 with permission from (the former) M.A.F.F and the Marine Biological Association through whose offices the tags were returned.
- 7.2 The return rate was very low at barely more than 1%, with firm conclusions correspondingly difficult to draw.
- 7.3 Most returns were from short-term recaptures at or near the point of tagging, indicating fish remained in the same locality during the summer/autumn season.
- 7.4 Other recaptures were from the locality of the point of tagging the following summer/autumn season, indicating that at least a proportion of the mullet returned to that locality.
- 7.5 Two spectacularly long range recaptures were made of mullet tagged at Ayr in S.W. Scotland the following winters off the N.W. coast of France, and one such fish off Anglesey in the autumn presumed to be on its way south, on what is presumed to be a spawning migration.
- 7.6 Set against this, and from a much larger tagging sample, absolutely no evidence was found of fish from the English south coast crossing the English Channel. Similarly, no fish tagged in the Channel Islands has reappeared on the English coast. It is thought likely there is little if any cross-Channel mixing of stocks and that the English fish may simply move a relatively short way offshore to spawn. There was limited evidence of a westward movement along the English south coast during the autumn.
- 7.7 The migratory habits of mullet are complicated by their breeding regime, where only a proportion of the stock is believed to breed in any year. Thick-lipped mullet are thought to spawn on alternate years. It is likely that the spawning and non-spawning stock behave differently, but the tagging survey conducted was not sufficiently extensive or sophisticated to disentangle the differences.

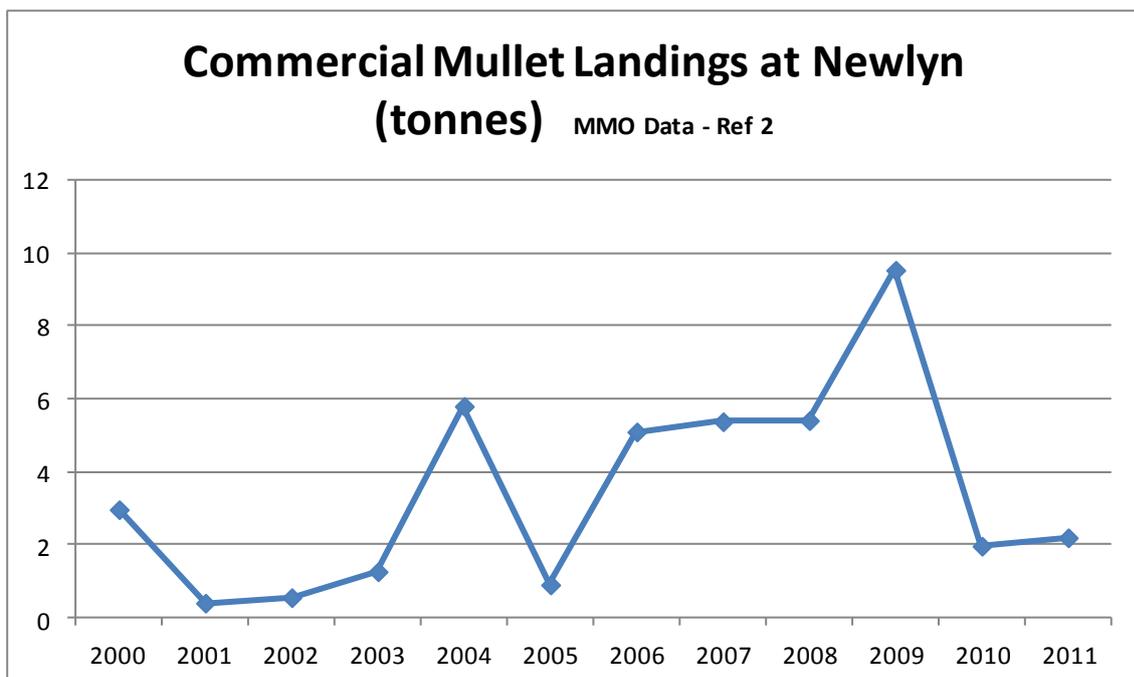
8. Vulnerability of Mullet to Commercial Overfishing

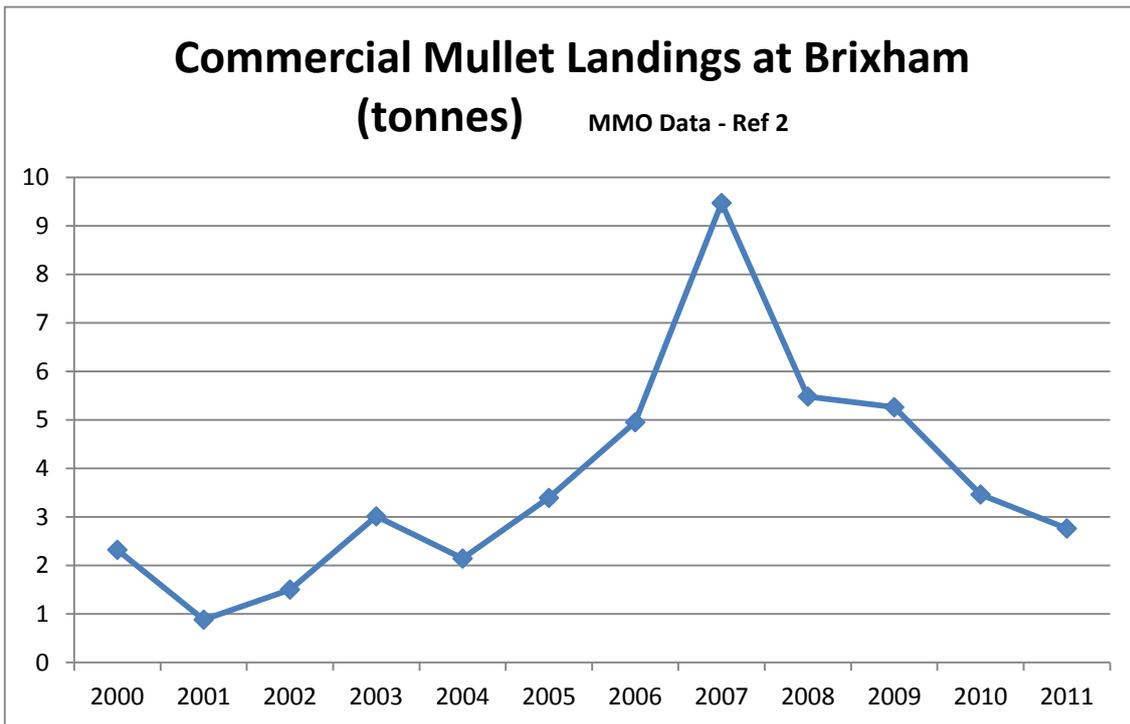
- 8.1 Mullet are slow-growing fish. Thick-lipped mullet are thought to reach breeding maturity at about 40cm and at 9 years of age for males and 47cm and 11 years of age for females (Ref: 5a). Many mullet anglers regard a 5lb thick-lip as a good but achievable specimen; such a fish might be in the region of 55cm in length and nearing 20 years old (Ref 5b). (This growth rate data is quite old and may have been affected to a limited degree by recent warmer winters; it also does not take into account possible regional variations.)
- 8.2 NMC catch statistics in section 6 suggest mullet stocks are in gradual long-term decline and thus do not enjoy adequate protection at present. The removal of an already low MLS for mullet from 01/01/2000 is an example of such inadequacy.
- 8.3 The Marine Conservation Society advises readers of its fishonline database (Ref 6) to “*Avoid eating fish below 47cms, the size below which many fish are immature, and during January - April, the spawning season*” and awards grey mullet caught by netting a 4 rating on its scale of 5 i.e. “*should not be considered sustainable, and the fish is likely to have significant environmental issues associated with its production.*” A small winter line caught (foul-hooking) fishery based on the Manacles Reef is rated 5 because it is targeted on spawning aggregations.
- 8.4 The commercial mullet fishery is largely prosecuted using nylon monofilament nets deployed inshore, often by boats less than 10 metres whose catches are not always fully recorded, by fishermen who may be full-time professional but often are part-time or casual. Anecdotal evidence from NMC member suggests that virtually no area where recreational mullet angling takes place is safe from commercial attention, whether legal or illegal.
- 8.5 Inshore commercial fishing can have a disproportionate effect on mullet stocks in a local area as mullet are thought to become resident for the duration of the summer/autumn season (see section 7.3). Small estuaries and tidal creeks are particularly vulnerable. One netting of such a location in May could effectively end recreational mullet angling at that venue through to November.
- 8.6 Such damage could persist into following seasons (see section 7.4)
- 8.7 Multiple-tonne catches of mullet are occasionally made inshore in winter, particularly by beach seines in the Newquay and Sennen areas of Cornwall. It is unclear if these are fish on a spawning migration or non-spawning fish tightly shoaled for the winter. Either way, such large catches are likely to have a severe impact on recreational mullet angling the following season(s) along whatever section of coastline the fish would have dispersed.
- 8.8 Overwintering/spawning mullet are vulnerable as a by-catch in the winter pair-trawl bass fishery active in the English Channel and SW Approaches.

8.9 Recorded landings of grey mullet have increased substantially since 2005 though a proportion of the early growth may have been due to the introduction of Registered Buyers and Sellers Scheme from 2005. The national statistics shown in the chart hide a trend of declining catches in the SW and rising catches in the SE, see below. It is felt likely that the small fall seen in 2011 will accelerate in future years as the level of catches now in the SE prove as unsustainable as those in the SW.

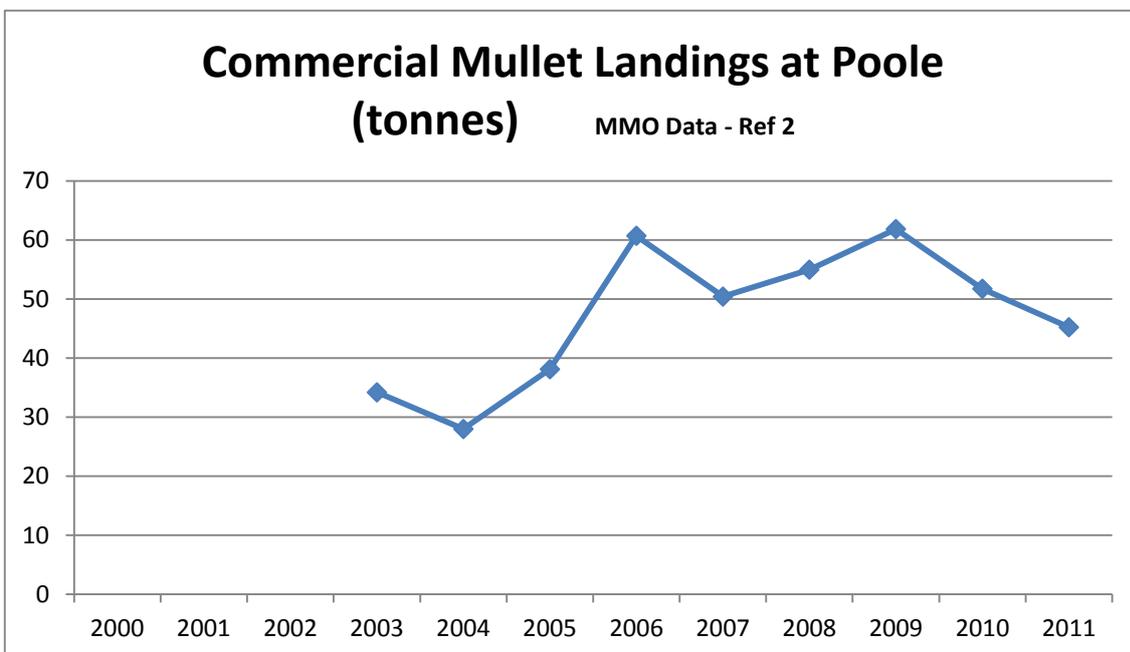


8.10 There is evidence of recent decline in landings at SW ports with a long-standing record in mullet fishing, possibly suggesting increased catches through the last decade had exceeded sustainable levels. For example, Newlyn and Brixham ...

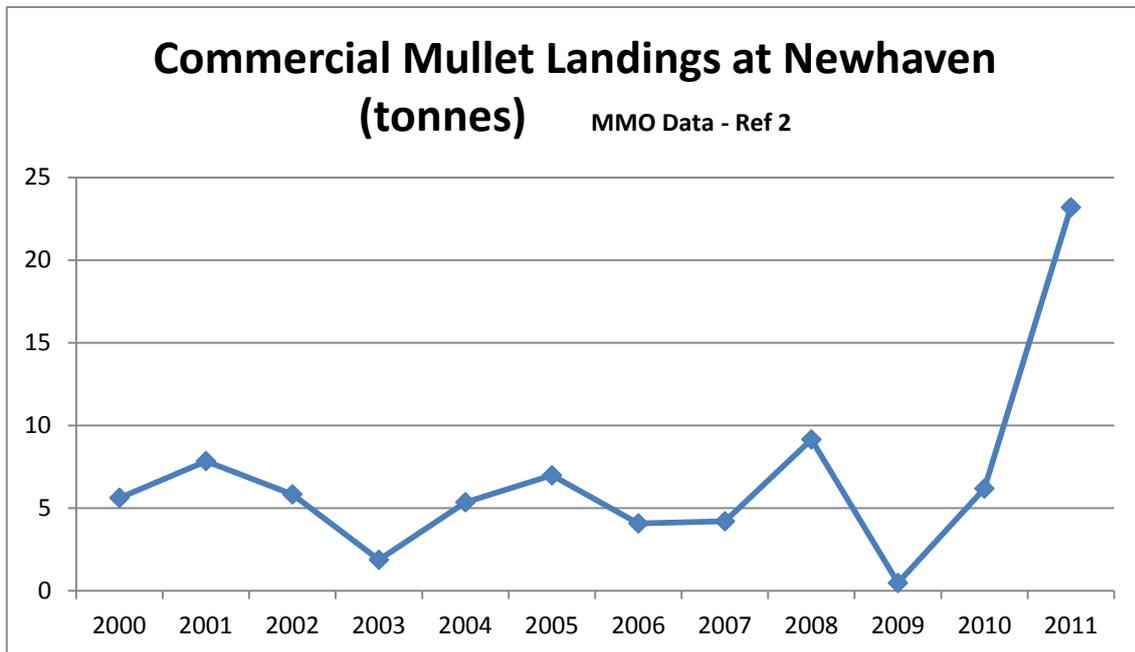




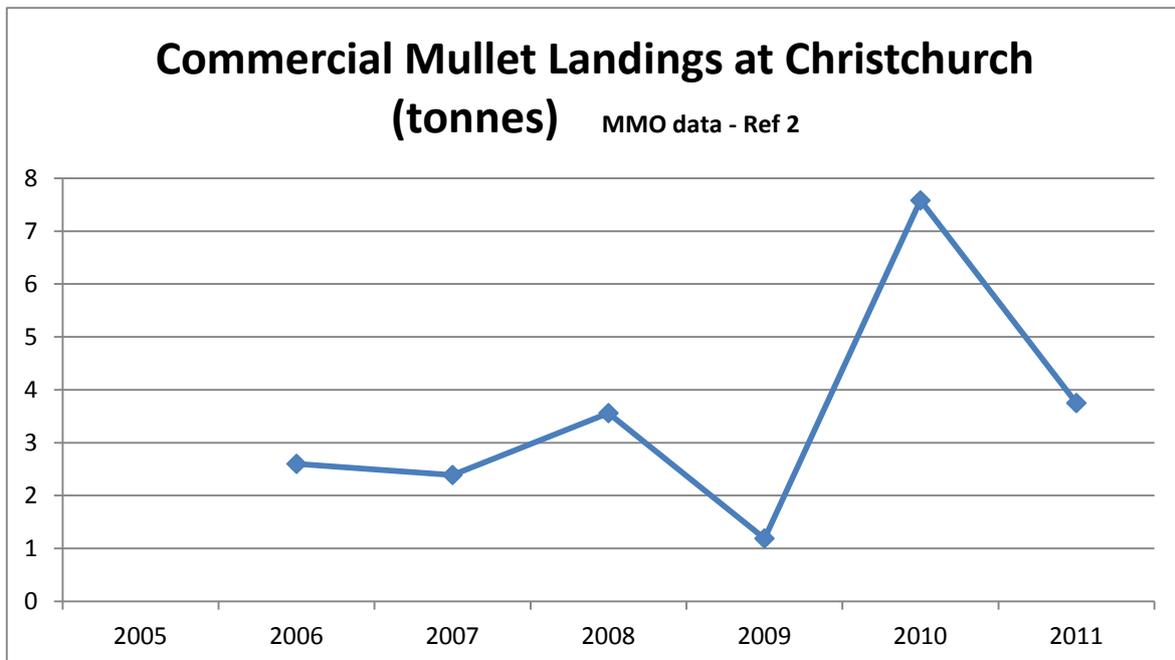
8.11 A similar trend pertains at Poole in Dorset, where prodigious quantities of mullet are extracted mainly from the bass nursery area, suggesting that not only are mullet being fished at unsustainable levels but that there is likely to be a substantial dead bycatch and/or illegal landing of bass.



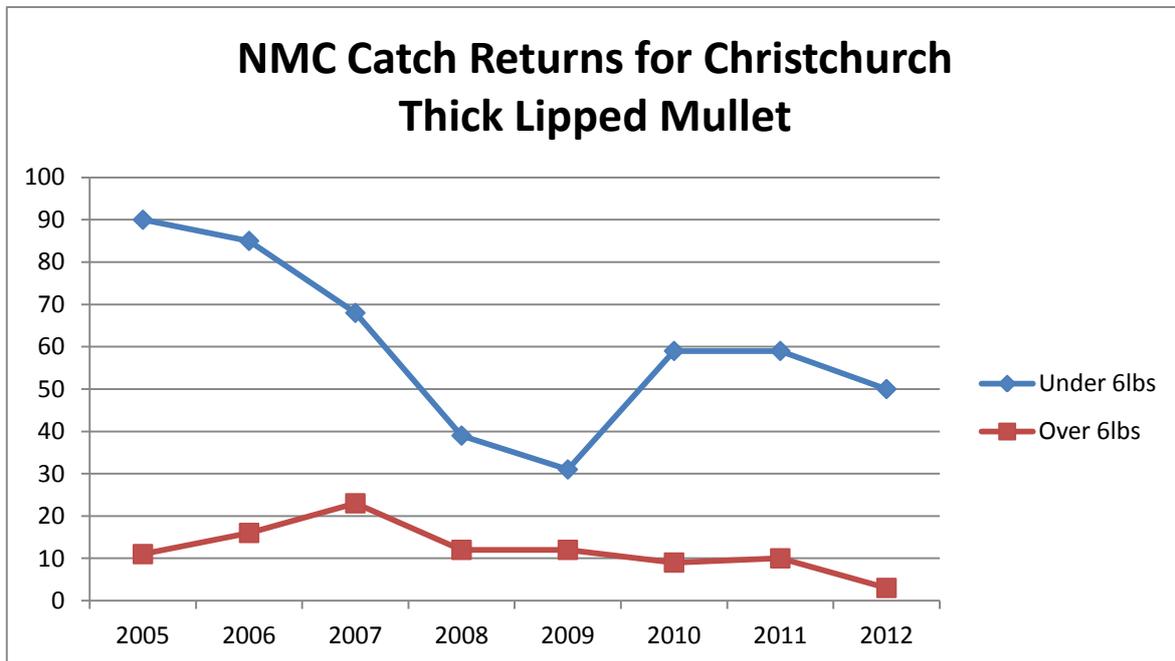
8.12 A worrying increase in mullet landings at various SE ports reflects a growing interest in mullet as a commercial species, but is unlikely to prove sustainable. For example, Newhaven...



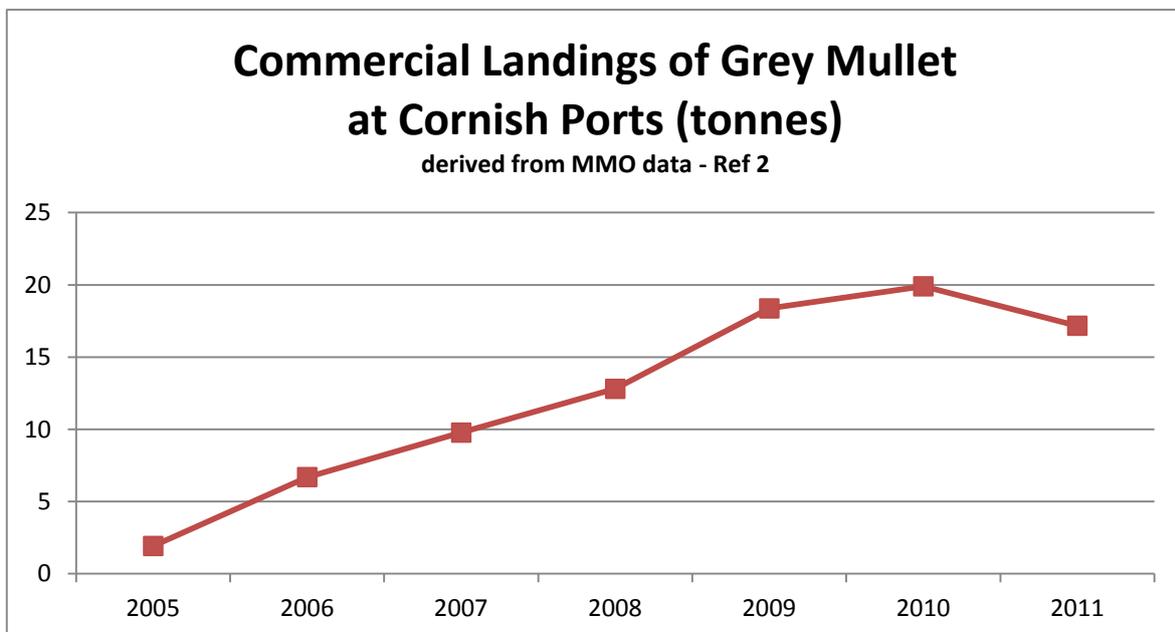
8.13 Christchurch Harbour in Dorset is historically one of the most important centres for recreational mullet angling in the UK, famed for the high proportion of specimen-sized thick lipped mullet it produces. Commercial mullet landings at Christchurch follow the familiar trend of increase followed by decline...



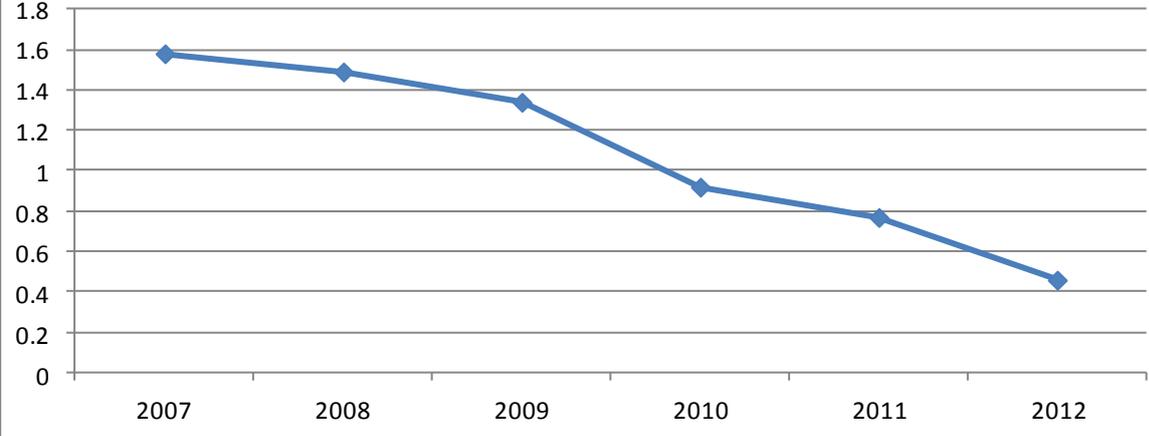
It is difficult to escape the conclusion that the level of commercial exploitation has had a deleterious effect on recreational fishing over the same period. In particular, the number of larger, older specimens is in consistent decline...



8.14 This pattern is repeated in other areas. These tables compare Cornish commercial mullet landings with recreational catch returns of a Cornish mullet angler who fished an average of 93 times per season over the period concerned.



**Average Number of Thick Lipped Grey Mullet
per session from R. Camel Catchment
by Recreational Angling**



9. Protection for Mullet Stocks

9.1 "Best Value" in the mullet fishery clearly lies with recreational sea-angling rather than commercial fishing. It may be the case (or may not) that by inclusion of added value downstream of the fish-market and inclusion of grey market sales, total value of the commercial fishery could match expenditure by recreational anglers. But this would be at the expense of what appears to be the gradual destruction of the resource which has a far higher unit value in the recreational sector, and which would otherwise use that resource sustainably.

9.2 The Cabinet Office "Net Benefits" report of 2004 (Ref 7) recommended "*Fisheries departments should review the evidence supporting arguments for re-designating commercially caught species for wholly recreational sea angling, beginning with bass by the end of 2004.*" Not only was there no action by the end of 2004, but Defra has effectively evaded the issue of management of fisheries for recreational use ever since.

9.3 It is not clear whether the legal framework exists to designate species for wholly recreational use. However given the political will it is clearly feasible to introduce management measures that would prioritise recreational use, providing conditions for the recreational fishery to flourish by facilitating access to both more fish and fish of a larger average size that anglers covet. Essentially this means reducing the commercial take, particularly of smaller fish, allowing more to grow on to sexual maturity and beyond.

9.4 NMC recommends the following measures to enhance the recreational fishery for grey mullet:

- A substantial reduction in inshore netting, including the elimination of netting in estuarine environments.
- The introduction of an MLS or equivalent minimum marketing size that would allow all grey mullet to spawn at least once, for example 50cm.
- A commensurate increase in mesh sizes for gill nets etc.
- A prohibition on landing/marketing grey mullet during the winter spawning season, January – April.

9.5 These measures would accrue significant other benefits. For example, a ban on estuarine netting would hugely simplify enforcement of bass nursery area regulations and increase compliance. Protection of migratory salmonid species would similarly be enhanced. Other recreationally important species such as flounder and gilthead bream would benefit.

9.6 NMC does not see any pressing need for formal measures such as bag limits or close season applied to recreational angling for grey mullet, given the high level of voluntary catch-and-release and high level of survival of fish released. However, without prejudice, we would be prepared to discuss such issues further as part of a package of measures including items as outlined in section 9.4 that reduce the commercial take.

10. References

1. Invest in Fish South West Report: The Motivation, Demographics and Views of South West Recreational Sea Anglers and their Socio-Economic Impact on the Region
http://resources.anglingresearch.org.uk/sites/resources.anglingresearch.org.uk/files/The_Motivation,_Demographics_&_Views_of_SW_Recreational_Sea_Anglers.pdf
2. MMO spreadsheet for landings of grey mullet by port 2000 – 2011 available from DavRigden@aol.com
3. A Review Of The Status Of Grey Mullet In Commercial Fisheries In England, 2007, Graham Pickett for Cefas, Lowestoft.
4. Broadhurst M.K., Butcher P.A. and Cullis B.R. (2011); Post-release mortality of angled sand mullet (*Myxus elongates*: Mugilidae); Fisheries Research 107, 272 - 275
5. a: Hickling C.F. (1970); A contribution to the natural history of the English grey mullets;
Journal of the Marine Biological Association of the UK 50, 609-633
b: Kennedy, M & Fitzmaurice, P (1969); Age and growth of thick-lipped grey mullet in Irish waters; Journal of the Marine Biological Association of the UK 49, 683 - 699
6. Marine Conservation Society Fishonline Database
<http://www.fishonline.org/fish/grey-mullet-thicklip-138>
7. Cabinet Office, Prime Minister's Strategy Unit (2004); Net Benefits – A sustainable and profitable future for UK fishing
<http://webarchive.nationalarchives.gov.uk/20060905000147/http://strategy.gov.uk/downloads/su/fish/pdf/NetBenefits.pdf>
8. NFSA survey results available from DavRigden@aol.com

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